

THE CLAIMS

What is claimed is:

1. A ball comprising a thin dense layer encasing a core, wherein the thin dense layer is encased by a cover, the thin dense layer is comprised of a fully neutralized ionomer and has an inner diameter of at least 38.4 mm, has a specific gravity of greater than 1.2, has a thickness from 0.025 mm to 1.27 mm and is positioned at a distance of less than 4.83 mm from the surface of the ball.
2. The golf ball of claim 1, wherein the thin dense layer is a non-continuous layer.
3. The golf ball of claim 2, wherein the non-continuous layer comprises a polyolefin.
4. The golf ball of claim 3, wherein the non-continuous layer comprises a copolymer of polyethylene and an acrylic or methacrylic acid.
5. The golf ball of claim 4, wherein the non-continuous layer comprises a terpolymer of ethylene, a softening acrylate class ester selected from the group of methyl acrylate, n-butyl-acrylate and iso-butyl-acrylate, and a unsaturated carboxylic acid selected from the group of acrylic acid and methacrylic acid.
6. The golf ball of claim 1, wherein the thin dense layer is a non-continuous layer and is comprised of a material selected from a group consisting of metallocene catalyzed polyolefins, polyesters, polyamides, non-ionomeric thermoplastic elastomers, copolyether-esters, copolyether-amides, thermoplastic or thermosetting polyurethanes, polyureas, polyurethane ionomers, epoxies, polycarbonates, polybutadiene, polyisoprene, and blends thereof.
7. The golf ball of claim 2, wherein the non-continuous layer further comprises fibers.

8. The golf ball of claim 7, wherein the fibers are selected from a group consisting of carbon graphite, glass, aramid, polyester, polyethylene, polypropylene, silicon carbide, boron carbide, natural and synthetic silk.
9. The golf ball of claim 1, wherein the cover has a Shore D hardness of less than about 65.
10. The golf ball of claim 9, wherein the cover has a Shore D hardness of between about 30 and about 60.
11. The golf ball of claim 10, wherein the cover has a Shore D hardness of between about 35 and about 50.
12. The golf ball of claim 11, wherein the cover has a Shore D hardness of between about 40 and about 45.
13. The ball of claim 2, wherein the specific gravity of the non-continuous layer is greater than 1.5.
14. The ball of claim 13, wherein the specific gravity of the non-continuous layer is greater than 1.8.
15. The ball of claim 14, wherein the specific gravity of the non-continuous layer is greater than 2.0.
16. The ball of claim 2, wherein the thickness of the non-continuous layer is from 0.127 mm to 0.76 mm.
17. The ball of claim 16, wherein the thickness of the non-continuous layer is from 0.25 mm to 0.5 mm.

18. The ball of claim 1, wherein the core has a specific gravity of less than 1.0.
19. The ball of claim 2, wherein the core has a specific gravity of less than 0.9.
20. The ball of claim 1, wherein the core is made from a foamed material.